



## **Dynamic Design: Launch and Propulsion**

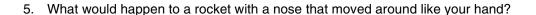
## Flying Straight

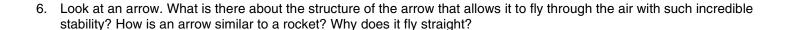
## STUDENT ACTIVITY

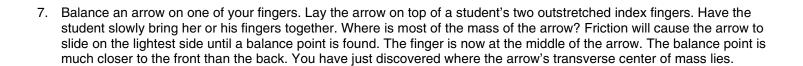
## **PROCEDURE**

1. What questions occur to you about the fins of a rocket?

- 2. Think about rocket fins. What effect do you think fins have on a rocket?
- 3. Have you ever stuck your hand out of the car window at 55 miles per hour? What did you notice?
- 4. What happened when you moved your hand around?







8. Next, examine why an arrow has feathers toward the back. Using an arrow without feathers, lightly toss it underhanded across an area where you do not hit other students. Do the same with an arrow with its feathers intact. What differences did you see?





9.	What happens to the stability when the mass at the end of the arrow is changed? Add mass to one end of the arrow and describe the change in stability.
10.	What are some of the factors (variables) that are important to rocket fins? Think about what you experienced in the activity in numbers 7-9.
11.	Choose one fin variable to test (manipulated variable). What variable are you testing (i.e. fin shape, size, number, placement)?
12.	What response or effect will you be looking for (responding variable)?
13.	List all the things that have to stay the same to ensure that the test is fair (controlled variable).
14.	Have your teacher or supervisor approve your plan and schedule a time for testing.
Tea	acher Signature
	sting Time